

## REMARKS

### In the Claims

Claim 10 has been amended to depend from claim 1 instead of claim 9. Claim 9 was mistakenly indicated in the Preliminary Amendment filed January 10, 2002, as the claim from which claim 10 depends. The correct dependency was listed in the Appendix to the Preliminary Amendment entitled "CLAIMS AS AMENDED FOR EXAMINATION".

Claim 16 has been amended to correct for a typographical error. Specifically, on line two of claim 16, the term "ANG/SDB/Cys7Cys 236" has been replaced with the term -- ANG/SBD/Cys7Cys 236--. Support for the amendment is to be found *inter alia* in the description at page 16, line 3, and at page 20, line 13, of the specification as originally filed. Accordingly, applicant respectfully requests the Examiner to enter the amendment.

### Restriction Requirement

There are 27 claims pending in the instant application. In the Office Action mailed January 29, 2003, the Examiner stated that he considers claims 1-10, directed to a method of producing a modified glutenin or seed-storage protein, are linked to claims 11-27, directed to a modified glutenin or seed-storage protein. Applicant notes and acts upon this concession by the Examiner.

The Examiner also states that Claims 1-7, 9-14 and 17-27 are generic. However, the Examiner alleges that the application contains claims directed to more than one species of the generic invention that are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1. The Examiner further alleges that the claims define distinct species as follows:

- Species I. Claims 8 and 15: low molecular weight glutenins, high molecular weight glutenins, gliadins, puroindolines, grain softness proteins, friabilins, and chloroform/methanol soluble protein;
- Species II. Claim 16: modified glutenin or seed storage protein selected from the group consisting of: ANG/SBD/Cys7Cys 236, ANG/OHBD/Cys7Cys236, and ANG/CM<sub>16</sub>/Cys7Cys126; and

Species III. SEQ ID Nos. 1-26.

The Examiner states that species I, II and III are not linked by the same or corresponding technical feature as to form a single inventive concept under PCT Rule 13.2 and therefore requires the applicant to elect a single species.

***Response to Requirement for an election of species***

In response to this requirement, applicants elect the following species with traverse of the requirement for an election in this case:

In claims 8 and 15 applicant hereby elects the alleged species consisting of high molecular weight glutenins. Applicant submits that each of claims 1-27 are readable on the elected species of high molecular weight glutenins.

In claim 16 applicant hereby elects the alleged species consisting of a protein (ANG) derived from C hordein and having a starch binding domain (SBD) and N-terminal and C-terminal cysteine residues inserted thereto, and being designated ANG/SBD/Cys7Cys 236. Applicant submits that claims 1-5, 7-12, and 14-27 are readable on the modified protein designated ANG/SBD/Cys7Cys 236.

With respect to the sequences contained in the application, applicant hereby elects SEQ ID NO: 19. Applicant directs the Examiner's attention to the description at page 6, lines 26-29 indicating that SEQ ID NO: 19 relates to the C-hordein base protein ANGΔCys7Cys 236. This base protein was mutated in accordance with the teaching provided in the instant specification, to introduce various binding domains and cysteine residues. Applicant submits that claims 1-27 are readable on SEQ ID NO: 19.

Applicants respectfully traverse the Examiner's requirement for an election of species for the reasons provided in the Office Action mailed January 29, 2003. The Examiner has based his requirement of election upon PCT Rule 13, however this rule governing unity of *invention* of an International application is not relevant to the question of an election of species. This is because PCT Rule 13.2 defines "special technical features" as "those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art". In the instant case, the Examiner has failed to provide evidence supporting the allegation that any alleged species

fails to make a contribution over the prior art.

With particular regard to the Examiner's requirement for an election of a single sequence, applicants submit that certain sequences are not unrelated. To assist the Examiner, applicants provides the following summary of sequences contained in the application.

SEQ ID NOs: 1-13 are amplification primers for detecting or producing native or modified glutenin or seed-storage protein-encoding genes. In particular, SEQ ID NOs: 1 and 2 relate to primers for amplifying a 477bp fragment of the C hordein gene of barley. SEQ ID NOs: 3 and 4 relate to primers for amplifying DNA encoding the starch binding domain (SBD) of glucoamylase-1 of *Aspergillus niger*. SEQ ID NOs: 5-9 relate to primers for amplifying CM16 and CM17 genes of wheat. SEQ ID NOs: 10 and 11 relate to primers for amplifying a genomic clone encoding puroindoline A (PIN-A). SEQ ID NOs: 12 and 13 relate to primers Bx17 3' and RGS2024, respectively, for detecting genes for ANG/domain/Cys7Cys236 in recombinant wheat.

SEQ ID Nos: 14, 18 and 19, relate to the base C hordein protein and vector comprising same. In particular, SEQ ID NO: 18 relates to a nucleotide sequence encoding the ANG $\Delta$ Cys7Cys236 protein and SEQ ID NO: 19 relates to the amino acid sequence of the ANG $\Delta$ Cys7Cys236 protein. SEQ ID NO: 14 relates to the vector pJANG $\Delta$ Cys7Cys236. Applicant submits that SEQ ID Nos: 14, 18 and 19 are closely related and, as a consequence, are appropriately considered to be members of the same species.

SEQ ID Nos: 16, 17, and 20-26 all relate to ligand binding domains that have been introduced to a base glutenin or seed-storage protein to produce the modified protein of the invention. In particular, SEQ ID NO: 16 relates to a nucleotide sequence encoding the oleosin hydrophobic binding domain (OHBD) and SEQ ID NO: 17 relates to the amino acid sequence of OHBD. SEQ ID NO: 20 relates to a nucleotide sequence encoding the starch binding domain (SBD) of the glucohydrolase from *Aspergillus niger* and SEQ ID NO: 21 relates to the amino acid sequence of the SBD from *Aspergillus niger* glucohydrolase. SEQ ID NO: 22 relates to the nucleotide sequence encoding a protease-binding protein (CM16) of wheat. SEQ ID NO: 23 relates to the amino acid sequence of CM16. SEQ ID NO: 24 relates to the amino acid sequence of a protease-binding protein (CM17) of wheat. SEQ ID NO: 25 relates to the nucleotide sequence encoding a lipid-binding protein (PIN-A) and SEQ ID NO: 26 relates to the amino acid sequence of PIN-A. Applicant submits that SEQ ID Nos: 16, 17, and 20-26 are closely related as ligand-binding domains

and, as a consequence, are appropriately considered to be members of the same species.

SEQ ID NO: 15 relates to the N-terminal sequence of a modified seed-storage protein, in particular the protein designated ANG/SBD/Cys7Cys236 comprising a starch binding domain inserted into the vector pJANG $\Delta$ Cys7Cys236.

The Examiner is respectfully requested to reconsider and withdraw the requirement of an election of species in view of the foregoing amendment and remarks.

Please direct any calls in connection with this application to the undersigned at (415) 781-1989.

Respectfully submitted,

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Date

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